SUBMISSION TO FOOD AND DRUG ADMINISTRATION AND THE NATIONAL TRANSPORTATION SAFETY BOARD.

It is a well know scientific fact that substances other than alcohol cause impairment. The first two papers submitted to you, " A Report on the Incidence of Drugs and Driving in Canada" and "The Involvement of Drugs in Driving in Canada: An Update to 1994" outline the types of drugs found in Fatal Motor Vehicle Accidents and Impaired Driving by Drug Cases, where blood was obtained. The two classes of drugs, which far out number the rest, are Cannabis and Benzodiazepines!

The extent of "Drug Impaired Driving in the World " has been well underestimated. The third article submitted " Alcohol, Drugs and Impairment in Fatal Accidents in BC" tries to answer this question. This article showed that 9% of all FMVA's in BC were caused by DRUGS ALONE, and another 10% were caused by the combined effect of SMALL AMOUNTS OF DRUGS COMBINED WITH SMALL AMOUNTS OF ALCOHOL. Can we make this assumption for impaired drivers? we did this correlation for alcohol! The scientific literature published throughout the world has shown that between 10-40% of impaired drivers with BAC's less than 100 mg% are impaired by drugs.

The fourth article submitted "Impaired Driving by OTC's and Prescription Drugs" was presented to the 7 th. Annual Drug Recognition Expert Conference in Long Beach California June 2001, outlines how drugs impair driving ability and some of the known dangers and how proper labeling for Prescriptions and OTC preparations will help to reduce impaired driving and Fatal MVA's

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OVER-THE-COUNTER DRUGS, PRESCRIPTION MEDICATION and DRIVER IMPAIRMENT

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THE MOST COMMON CLASSES OF DRUGS WHICH CAN CAUSE IMPAIRMENT

- Over-the-counter drugs (OTC's)
  - Antihistamines, Cold Preparations, Pain Killers
- Sedatives (Depressants)
- Antidepressants
- Neuroleptics.
- Stimulants
- Narcotic Analgesics
- Required medication

WHAT DRUGS NOT TO INCLUDE

- Diuretics
- Antibiotics
- Inhalation Anesthetics
- Neuromuscular blocking agents

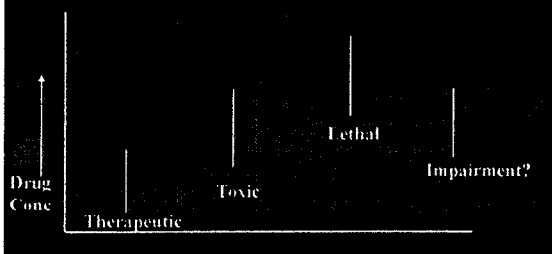
HOW DO OTC's AND Rx DRUGS CAUSE IMPAIRMENT

- The effect of the drug causes the impairment, e.g. sedation.
- The drug is taken in higher than recommended doses, and this dose causes the impairment.
- The drug is taken with other medication, and the combined effect causes the impairment.
- The drug is taken with alcohol and the combined effect causes the impairment

Basic Pharmacological Premise

- Observe the effects of drugs at therapeutic levels (to the extent that they are known)
- Assume that those effects are magnified as the therapeutic level is surpassed

BLOOD DRUG LEVELS



Scheme for Drug classification Wolschrijn et al.

Category	Scale	Description
I	1	No Impairment
II.1	2	Minor Impairment
II.2	3	Moderate Impairment
III	4	Severe Impairment

MORE ABUSE OF Rx AND OTC DRUGS

THAN THE COMBINED USE OF ALL ILLICIT DRUGS

WHY ARE LEGAL Rx DRUGS USED ILLEGALLY

- Decreased availability of illegal drugs.
  - Used until availability of illegal drugs increase
- Availability of Rx Drugs.
- Price of Rx Drugs, cheaper than illegal.

IMPACT OF SEDATING DRUGS

- DOT. Drowsiness contributes to 200.00 traffic accidents and 10.000 fatalities each year (DOT).
- Canadian study showed that a driver who is killed and who has been the cause of the accident is 1.5X more likely to have taken an antihistamine.

IMPACT OF SEDATING DRUGS

- Starmer (1985) reported that 5% of drivers may use an antihistamine before driving.
- CNS Depressant Effects are common to many OTC and Rx drugs.

SEDATION

- **THE ANNOYING FEELING OF DROWSINESS**

  Somnolence. Impaired concentration. Decreased learning Ability. When challenged, patients can perform a mental task without difficulty.
- **IMPAIRMENT OF COGNITIVE AND PSYCHOMOTOR FUNCTIONS**:

  (attention, memory). The impairment cannot be overcome until the effect of the drug abates

STATISTICAL INFORMATION ON ABUSED Rx DRUGS

- 1996 NFLD STUDENT SURVEY:
  - 5.1% Of students experimented with stimulants a doctor did not prescribe.
- Over 4% have used non-prescribed tranquillizers.
- 2.1% have tried non-prescribed barbiturates.

OTHER STATS

- 50% of all emergencies room visits for drug-related problems are connected to Rx drug misuse or accidental overdose.
- In the US, 19% of young adults reported non-medical use of sedatives and 15% reported non-medical use of tranquillizers.

PER SE LAWS

- GERMANY
- BELGIUM
- SWEDEN

CNS DEPRESSANT EFFECTS

ANTIHISTAMINES: MEDICAL USE

- ALLERGY (allergic rhinitis)
- COMMON COLD (without value)
- MOTION SICKNESS
- VERTIGO
- SEDATION.
- URTICARIAL LESIONS
- ANGIONEUROTIC EDEMA

3 TYPES OF ANTIHISTAMINES

- 1 st. Generation. Sedating
- 2 nd. Generation Thought to be non-sedating at recommended doses.
- 3 rd. Generation. Experimental

1 st Generation Antihistamines Class: Alkylamines

- CHLORPHENIRAMINE (Allerest maximum strength, Chlor-Trimeton, Cerose DM
- TRIPOLIDINE Actidil
- BROMPHENIRAMINE Dimetane, Dayquil,
- DEXCHLORPHENIRAMINE Polaramine
- DEXBROMPHENIRAMINE Drixoral
- PHENIRAMINE Naphcon-a

1 st Generation Antihistamines Class:Ethanolamines

- DIPHENHYDRAMINE Benadryl, Actified
- CLEMASTINE Tavist
- CARBINOXAMINE
- DIPHENYLPYRALINE Creo-Rectal
- DOXYLAMINE Calmydone, Nyquil
- BROMODIPHENHYDRAMINE
- PHENYLTOLOXAMINE Omni-Tuss
- more likely to cause depression, sedation, somnolence, ⇧ antimuscarinic activity.

1 st Generation Antihistamines Class:Ethylenediamine

- PYRILAMINE Midol
- PHENIRAMINE Triaminicin
- TRIPELENAMINE Pyrbenzamine
- ANTAZOLINE Vasocon-A
- METHAPYRILENE

- Somnolence most common with this group

1st Generation Antihistamines Class:Phenothiazines

- PROMETHAZINE — Phenergan
- TRIMEPRAZINE — Panectyl

- ⇧ anticholinergic activity and sedative effects

1st Generation Antihistamines Class:Piperazine

- CHLORCYCLIZINE
- CYCLIZINE — Megral
- HYDROXYZINE — Atarax
- MECLIZINE — Antivert, Dramamine.
- AZATADINE — Optimine

- ⇧ action, low incidence of drowsiness.

1st Generation Antihistamines Class:Piperidine.

- CYPROHEPTADINE — Periactin
- AZATADINE — Optimine
- PHENDIAMINE — Nolahist

- Devoid of anticholinergic activity.

2 nd. H_1 GENERATION ANTIHISTAMINES

- Loratadine — CLARITIN
- Cetirizine — ZYYRTEC, REACTINE
- Fexofenadine — ALLEGRA
- Terfenadine — SELDANE
- Aerivastine — PROLERT
- Mizolastine
- Ebastine
- Astemizole — HISMANAL
- Mequitazine
- Ketotifen — ZADITEN
- Azelastine — ASTELIN

Pharmacological Effects

1. **SMOOTH MUSCLE**
   Constriction. Antagonism of constrictor action on respiratory smooth muscle.
   Anaphylatic bronchospasm
2. **CAPILLARY PERMEABILITY**
   prevents formation of edema and wheal
3. **PREVENTS FLARE AND ITCH**
4. **EXOCRINE GLANDS**. Supress salivary, lacrimal and other exocrine glands
   (atropine like response)

Pharmacological Effects

5. **ANALPHYLAXIS and ALLERGY**
   -Histamine effects are prevented by antagonism
6. **CENTRAL NERVOUS SYSTEM**
   -Both depression and stimulation
   -Increased restlessness, nervous, unable to sleep (a striking feature of poisoning)
   -Decreased alertness, reaction time,somnolence
   -2nd generation do not cross blood brain barrier.

Pharmacological Effects

7. DECREASE IN MOTION SICKNESS.

8. ANTICHOLINERGIC EFFECTS

-decreased response to ACH

-H_2 no effect on ACH receptor

9. *LOCAL ANESTHETIC EFFECT*

ADVERSE EFFECTS STIMULATORY

- CHILLS
- DYSKINESIA
- DYSTONIA
- EPILEPTIC ATTACKS
- EUPHORIA
- HYPERREFLEXIA
- HUPERTENSION
- INSOMNIA
- IRRITABILITY
- HEADACHES
- MUSCLE TWITCHING
- NERVOUSNESS
- TACHYCARDIA
- TREMOR
- VAGAL STIMILATION

ADVERSE EFFECTS NEUROPSYCHIATRIC

- ANXIETY
- CATATONIA
- CONFUSION
- DELUSION
- DEPRESSION
- HALLUCINATIONS
- HYSTERIA
- IMPAIRED MENTAL EFFICIENCY
- IMPAIRED JUDGMENT
- PYSCHOSIS
- SCHIZOPHRENIA

ADVERSE EFFECTS PERIPHERAL

- AREFLEXIA
- BLURRED VISION
- PARALYSIS
- PARESTHESIAS
- TOXIC NEURITIS

ADVERSE EFFECTS DEPRESSIVE

- ATAXIA
- COMA
- DELIRIUM
- DIZZINESS
- DROWSINESS
- FATIGUE
- LASSITUDE
- NARCOLEPSY
- SEDATION
- SOMNOLENCE
- WEAKNESS

Sedation or drowsiness occurred in 10-25% of antihistamine users. Dose related and correlates with high serum drug concentrations.

ACUTE POISONING

- Stimulant effects, greatest problem.
- Hallucinations, excitement, ataxia, incoordination, athetosis, convulsions, fixed dilated pupils with flushed face, sinus tachycardia, urinary retention, dry mouth, fever, (similar to atropine poisoning), deep coma, cardiorespiratory collapse, death.

Sedating Antihistamines Have Been Found to Impair Performance On:

- Vigilance(Capacity to sustain attention under conditions of minimal arousal)
- Divided Attention (Ability to perform simultaneous mental and physical activities)
- Visual Perceptual Functioning
- Visual Motor Coordination
- Complex Attention Tasks.
- Working Memory(Ability to hold information temporarily in one's head for purposes of using this information in mental activities)

Drug Dosages Indicating Impairment**

- Triprolidine 5 or 10 milligrams.
- Diphenhydramine 50 milligrams
- Brompheniramine 4 milligrams.
- Clemastine 2 milligrams.
- Promethazine 10-25 milligrams.
- Chlorpheniramine 4 milligrams

**Related to a BAC of 50 mg% or greater

RATINGS:ANTIHISTAMINES

Drug	Dose mg	Acute/Chronic Residual	Category
Azatadine	1	A	II
Cetirizine	10	A	I-II
Chlorpheniramine	4	A	II-III
Diphenhydramine	50	A	II-III
Fexofenadine	60	A	I
Loratadine	10	A	I
Promethazine	50	A	III

RISK BENEFIT RATIO of TAKING ANTIHISTAMINES

- Loratadine 0.29
- Cetirizine 0.21
- fexofenadine 0.00
- Diphenhydramine 27.5
- Triprolidine 60.0

CONCLUSIONS.

- Older generation antihistamines are recognized as sedative in effect and capable of impairing driving performance to a level equivalent to that associated with a blood-alcohol concentration of 50 mg% or higher

CONCLUSIONS

- 2 nd. Generation antihistamines are clearly less sedating and impairing than their predecessors. No 2 nd generation H_1 antihistamine produced sedation except at doses 2-3X higher than the recommended dosages
- Adverse effects of antihistamines may be minimized by time of ingestion.
- Risk of a MVA resulted in inconclusive to negative results.

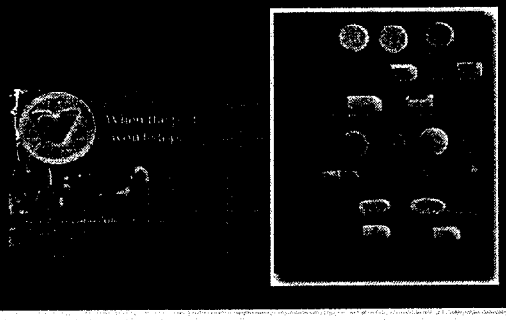
CONCLUSIONS

- Patients who took sedating antihistamine and felt the sedation had worn off and was not affecting their driving performance were tested and found to have impaired performance even though there was no feeling of either sedation or impaired performance on the part of the patient.

ANTIHISTAMINES

- **ALL CNS ACTING ONES** when taken in high doses with Coke/Pepsi lead to minor hallucinogenic effects.

BENZODIAZEPINES



MOST POPULAR Rx DRUGS ABUSED!

- **BENZODIAZEPINES:** **COST:**
  - HALCION (Triazolam)
  - ATIVAN (Lorazepam)
  - XANAX (Alprazolam) $1-3/tab.
  - RIVOTRIL (Clonazepam)
  - VALIUM (Diazepam)
- EUPHORIC FEELING AT HIGH DOSES
- CAUSE ANTEROGRADE AMNESIA
- DECREASES COCAINE SIDE EFFECTS.

CAUSES OF BENZODIAZEPINE IMPAIRMENT

- In the first few days of treatment?
- Combined effect with alcohol?
- Combined effect with other drugs?
- Too high a blood level?
- The type of benzodiazepine?

Benzodiazepines:2-5X's risk for a accident. In the first two weeks of use the risk is 8-10X's

EFFECTS ON DRIVING PERFORMANCE.

- Somnolence and sedation
- loss of motor co-ordination
- memory impairment
- behaviour disinibition
- paradoxical agitation

**

Benzodiazepine Rating
Acute Effects

Drug	Dosage (MG)	Impairment Rating
Alprazolam	0.25-0.5	Minor
	1.0	Moderate/not severe
Bromazepam	1.5	Minor
	3-6.0	Moderate/not severe
	12.0	Severe
Brotizolam	0.125-0.25	Not severe
Chlordiazepoxide	5.0-25	Moderate/not severe
Diazepam	2.0-5.0	Moderate
	10.0-20.0	Not Severe/Severe

Benzodiazepine Rating
Acute Effects

Drug	Dosage (mg)	Impairment Rating
Flunitrazepam	0.5-2.0	Severe
Lorazepam	0.5-1.0	Not Severe
	2.5-5.0	Severe
Lormetazepam	0.5-1.0	Moderate/not severe
	2.0	Severe
Medazepam	5-10.0	Minor/moderate
	15.0	Severe
Nitrazepam	2.5-5.0	Moderate/not severe
	10.0	Severe

Benzodiazepine Rating
Acute Effects

Drug	Dosage (mg)	Impairment Rating
Flurazepam	15.0-30.0	Severe
Oxazepam	10.0-20.0	Moderate/not severe
	30.0-50.0	Severe
Temazepam	5.0-10.0	Moderate
	20.0-30.0	Severe
Triazolam	0.125-0.25	Moderate/not severe
	0.5	Severe

Benzodiazepine Rating
Residual Effects

Drug	Dosage (mg)	Time hrs	Impairment Rating
Brotizolam	0.125-0.5	22	None-minor
Diazepam	10-20	12	Not severe
		22	Moderate/not severe
Flunitrazepam	0.5-2.5	12	Not severe
		22	Moderate/not severe
Flurazepam	15	12	Not severe
		22	Moderate/not severe
	30	12	Severe
		22	Moderate/not severe

Residual Effects

Drug	Dosage	Time hrs	Impairment Rating
Lorazepam	1.0	12	Minor
		22	Moderate/not severe
	2.5-5.0	12	Severe
		22	Moderate/not severe
Lormetazepam	0.5-2.0	12	None-minor
		22	Minor-moderate
Temazepam	10.0-30.0	12	Minor
		22	None-minor

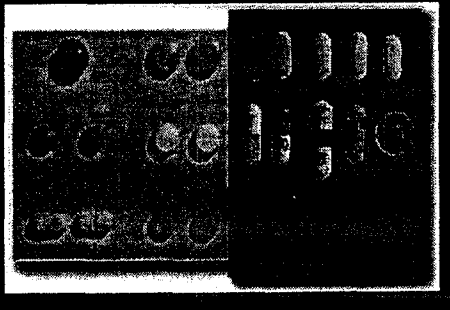
Residual Effects

Drug	Dosage mg	Time hrs	Impairment Rating
Nitrazepam	2.5-5.0	12	Minor
		22	Minor-moderate
	10	12	Not severe
		22	Moderate/not severe
Triazolam	0.125-0.25	12	Minor
		22	none
	0.5	12	Moderate not severe
		22	Moderate not severe

Residual Effects

Drug	*Dosage mg*	*Time hrs*	*Impairment rating*
Oxazepam	10	12	Minor
		22	None
	20	22	Minor
	30	12	Moderate/not severe
		22	None/minor
	50	12	Moderate/not severe
drug-free		22	minor

BARBITURATES



Classification of Barbiturates

ultra short acting
- ↗ not available in pharmacies

short acting
- ↗ favored by abusers

intermediate acting

long acting
- ↗ not generally abused

Barb	Class	Colour	Name
Pentobarb (Nembutal)	Short	Yellow	Yellow Jackets, Nembies
Secobarb Seconal	Short	Red	Reds, Pinks, Red Devils
Amobarb & Secobarb (Tuinal)	Interm & Short	Red/Blue	Rainbow, Christmas Trees
Phenobarb (Luminal)	Long	White Tabs	Idiot Pills

Barbiturates

- **Individuals on long-term phenobarbital therapy (e.g., epileptics) do not exhibit significant drowsiness**

OTHER SEDATIVES/HYPNOTICS

- **SOMA (Carisoprodal).**
- **CHLORAL HYDRATE**
- **ETHCHLORVYNOL(Placidyl)**
- **ZOPICLONE (Imovane).**
- **USED AS KNOCK OUT DRUGS.**
- **FEEL GOOD AT HIGH DOSES.**

SEDATIVE PROPERTIES OF ANTIDEPRESSANTS.

No Sedation	Minor Sedation	Moderate Sedation	Severe Sedation
Citalopram	Desipramine	Clomipramine	Amitriptyline
Fluoxetine	Phenelzine	Imipramine	Doxulepine
Fluvoxamine		Maprotiline	Doxepine
Moclobemide		Nortriptyline	Mianserine
Paroxetine			Trazodone
Sertraline			Trimipramine
Viloxazine			

EFFECTS ON DRIVING

- Pathology if disease involves cognitive problems.
- Concentration and attention disturbances
- anxiety, irritability, tiredness

Antidepressants (con't)

- In healthy volunteers cognitive effects returned during the 2 nd week of treatment.
- Attention and motor performance didn't normalize until the 3 rd week.
- Imipramine sedative effects did not exceed 8 days.

TRICYCLIC ANTIDEPRESSANTS

- Most common cause of death from Rx drugs.

NEUROLEPTICS

- Include the Phenothiazines (chlorpromazine), butyrophenones(haloperidol), thioxanthines (flupenthixol), and benzamides(sulpiride).

EFFECTS ON DRIVING

- Sedation
- Motor disturbances of the extrapyramidal effects
- Decline of cognitive functions
- reduction of visuo-motor abilities and vigilance
- aggressiveness, temporary aggravation of psychotic troubles.

RATINGS, OTHER CNS DEPRESSANTS

Drug	Dose	Acute Chronic Residual	Category
Trazodone	75	A	II
Zolpidem	10	A	II-III
	10	R (8-12h), (12-16h)	I
Zopiclone	7.5	A	II-III
	7.5	R(8-12h)	II
	7.5	R(12-16h)	I-II
Amitriptyline	50	A	II-III
	75	A	II-III
Imipramine	50	A	II-III

CNS Depressants

pupils react slowly to light

droopy eyelids

sluggishness

un-coordination

slow, thick, slurred speech

disorientation

drunken behavior, with no odour of alcohol

DEPRESSANTS
GENERAL INDICATORS

Droopy eye lids
HGN, VGN, Ptosis
Slow reaction to light

Slow Thick, Slurred Speech

Disoriented, Drunk Like Behavior

Uncoordinated
Fumbling

Drowsiness

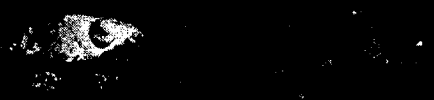
Slow reactions

Shallow Depressed Respiration

Sluggish

CNS STIMULANTS

- Dextroamphetamine (Dexedrine)
- Ephedrine
- Pseudoephedrine
- Phentermine
- Methamphetamine (Desoxyn)
- Methylphenidate (Ritalin)
- Phenylpropanolamine



Over-the-Counter Drugs

- **Pseudoephedrine, ephedrine and phenylpropanolamine have a stimulant effect**
- **Have not been shown to produce impairment, at recommended doses!**
- **Slight improvement due to stimulant effects?**

Examples of Brand Names and Generic Names of Over-The-Counter Stimulant Medications

- **Sudafed - (Pseudoephedrine)**
- **Scopoderm - (Scopolamine)**
- **Dexatrim - (Phenylpropanolamine)**

Stimulants

- **Therapeutic methamphetamine shows little or no driving impairment.**
- ***Abused levels show impairment.***

STIMULANTS:

- **IONAMIN** (Phentermine).
- **EPHEDRINE/PSEUDOEPHEDRINE** preps.
- **RITALIN.** $ 10-20/tablet.

- **COUNTERACT EFFECTS OF NARCOTICS/DEPRESSANTS.**
- **COCAINE/METHAMPHETAMINE SUBSTITUTES.**
- **PRECURSOR FOR METHAMPHETAMINE**

STIMULANTS
GENERAL INDICATORS

Anxiety, paranoia
possible hallucinations
Dilated Pupil
Rebound dilation
Talkativeness, rapid speech
Fast internal clock
Body tremors(legs, eye lids)
Muscle rigidity
Hyperactivity, exaggerated reflexes
Extreme weight loss, loss of appetite
Bad body odor
Heavy perspiration
Bloody, runny nose
Reddened nasal membrane
Deterioration of Septa
Grinding of teeth (bruxism)
Euphoria
Increased risk taking
Inability to concentrate
Hyperalert, excited
Agitated/restlessness
Wide mood swings
Inappropriate sleeping pattern, insomnia
Irritability
Possibly violent

NARCOTIC ANALGESICS

- **DILAUDID.**(4 or 8 mg tablets most popular). $ 35-50.00/tab.
- **MS-CONTIN** (60, 100 or 200 mg tablets $ 50-100/tab.
- **MORPHINE LIQUID** ($10.00/ml.)
- **T-3 or T-4.** $ 1-5/tab.
- **DEMEROL.**(50 mg tabs) $40.00/cap or $80.00 per ampoule.
- **NOVAHISTEX DH.** $ 15/100 mls.

NARCOTICS (contd)

- **PERCODAN** $10.00-15/tab
- **TALWIN.** $ 5-15/tab.
- **FIORINAL C 1/2.** $5-10/tab.
- **METHADONE.** $ 1.00/ml.
- **DEXTROMETHORPHAN.**(internet rage)

- **REPLACEMENT FOR HEROIN**
- **ADDICTED DUE TO OVERPRESCRIBING.**
- **EUPHORIC FEELING IN HIGH DOSES.**

Opiates, et al

- **All opiates possess sedative properties**
- **Therapeutic use has minimal effect on driving performance**
- **Daily doses of slow-release morphine sulfate showed no impairment**
- **Identical results with single 10 and 15 mg doses of morphine**
- **No significant impairment during methadone maintenance therapy**

EFFECTS ON DRIVING

- Sedation*
- Impairment of cognitive function*
- mood changes
- Impairment of psychomotor functions and pupil restriction.

*Wear off after some days or weeks.

*Long term morphine treatment in cancer patients does not increase the risk of accidents

RATINGS:NARCOTICS

Drug	Dose mg	Acute/Chronic /Residual	Category
Codeine	100	A	II-III
Morphine	2.5-10	A	II
	65	A	II

Examples of Brand Names and Generic Names of Over-The-Counter Narcotic Medications

- Benylin Expectorant - (Guaifenesin and Dextromethorphan
- Nyquil (Vicks) - (Doxylamine Succinate, Dextromethorphan, Acetaminophen, Pseudoephedrine)
- Robitussin-DM - (Guaifenesin and Dextromethorphan)
- Contac Cough Liquid - (Guaifenesin and Dextromethorphan)
- Cerose-DM - (Chlorpheniramine, Dextromethorphan and Phenylephrine)
- Tylenol Flu Maximum Strength - (Acetaminophen, Dextromethorphan, and Pseudoephedrine)
- Vicks Formula 44 - (Dextromethorphan)

NARCOTICS
GENERAL INDICATORS

Constricted Pupils
Droopy eye lids
Little or no reaction to light

All vitals signs lowered

Slow internal clock
Flaccid muscles
Slow deliberate movements
Slow reflexes

Track marks
On the nod
Slow, low, raspy Speech.

Dry mouth
Drowsy look
Facial itching
Cold clammy skin
Constipated
Difficulty in urination
Drowsiness

COMBINATION OF Rx DRUGS THAT MIMIC STREET DRUGS

- **HEROIN**
  - any Rx Narcotic
  - Talwin/Ritalin Combination
- **STIMULANTS**
  - Ephedrine/Pseudoephedrine in high doses
- **HALLUCINOGENICS**
  - High dose antihistamines
  - Dextromethorphan in High Doses

Required Medications

- Focus on two situations
  - Insulin in diabetics
  - Anticonvulsants in epilepties
- Both have potential impairment issues

Required Medications
Anticonvulsants

- **Drugs encountered in epileptic patients**
  - **Phenytoin**
  - **Phenobarbital**
    - Prescription phenobarbital
    - Metabolite of primidone
  - **Carbamazepine**
  - **Benzodiazepines**
    - Lorazepam
    - Clonazepam
  - **Newer anticonvulsants**
    - Lamotrigene
    - Gabapentin

Required Medications
Anticonvulsants

- **Reverse interpretation by the analyst**
  - **Presence at therapeutic level is evidence of probable *lack* of impairment**
  - **Occasional unexpected seizure can occur**
  - **Not the result of the drug or the lack of compliance by the patient.**

Required Medications
Insulin

- **Normal blood glucose 70-110 mg/dL**
- **Moderate hyperglycemia**
  - **Blood glucose 110-250 mg/dL**
    - No Impairment
- **Moderate hypoglycemia**
  - **Blood glucose 30-50 mg/dL**
    - Significant driving impairment
- **Mild hypoglycemia**
  - **Blood glucose 50-70 mg/dL**
    - No impairment detected

How to Prosecute the RX Impaired Driver

- Obtain the following information if possible.
- Will allow the DRE and Toxicologist to give better expert testimony.

Package Insert

- The insert contains vital information about the potential side-effects of the drug.

The Label

- The label contains information of the ingredients, instruction for use and potential side effects.
- Some ingredients may cause:
  - **Drowsiness**
  - **Stimulation**
  - **Dependency**
  - **May contain warnings against driving and operating machinery**

Prescription

- Prescriber's Name, Address, Phone Number and Signature
- Patient's Name and Address
- Date of Prescription
- Name of the Drug/Strength of the Drug
- Quantity
- Directions for Use
- Number of Refills Allowed
- Dr's Name

Prescription Label

- Pharmacy Name, Address, and Phone Number
- Prescription Name and Number
- Date of Fill Expiration Date Discard Date
- Patient's Name and Address
- Quantity
- Instructions for Use Warnings
- Physician's Name
- Strength of the Drug
- Refill Information

Prescription Warnings

- Interaction With Alcohol
- Driving Impairment
- Drug Interactions
- Side Effects
- Storage Issues
- Etc.

IMPORTANT QUESTIONS!

- What medication are you taking?
- What are you taking it for?
- What dose are you taking?
- When was the last time you it?
- When was the last time your prescription was filled?
- How many tablets are left?
- Are you taking any other medication?

Summary

- This discussion covers only a few commonly used drugs
- Many common prescription and over-the-counter drugs can produce significant impairment
- This impairment may be present even at therapeutic levels

Summary

- Many others may be expected to exhibit similar properties
- The presence of some drugs may suggest impairment in some individuals, but lack of impairment in others
- No specific laws currently exist relating impairment to blood levels for any drug except alcohol

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TO / À
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INFO. RENS.

FROM / DE
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Wayne Jeffery
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